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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,173	07/02/2003	Yi Liu	DDC 0543 PUS	5218
22045	7590	06/28/2004	EXAMINER	
BROOKS KUSHMAN P.C. 1000 TOWN CENTER TWENTY-SECOND FLOOR SOUTHFIELD, MI 48075			TRAN, BINH Q	
			ART UNIT	PAPER NUMBER
			3748	

DATE MAILED: 06/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/612,173

Applicant(s)

LIU, YI

Examiner

BINH Q. TRAN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 17 and 19-29 is/are rejected.
- 7) ☒ Claim(s) 11-16, 18, 30-35 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 06/25/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

***Claims 1-10, 17, and 19-29 are rejected under 35 U.S.C. 102 (e) as being anticipated by***

***Nakatani et al. (Nakatani) (Patent Number 6,679,052).***

Regarding claims 1, 19, and 21-22, Nakatani discloses a system for treating exhaust gases from an internal combustion engine (10), the system comprising: a housing (200) having a first flow path and a second flow path (e.g. Figs. 3-6, 12-13, 23, 39, 42, and 44) for transporting the exhaust gases from the engine, the flow paths having coaxially arranged portions (e.g. Figs. 3-6, 12-13, 23, 39, 42, and 44); a gas directing device (e.g. 251) for selectively directing the exhaust gases between the first flow path and the second flow path; a first NO<sub>x</sub> adsorbing catalyst (e.g. 210, 220) contained in the first flow path, the first NO<sub>x</sub> adsorbing catalyst requiring periodic regeneration to purge accumulated NO<sub>x</sub> (e.g. See col. 10, lines 42-67; col. 12, lines 7-28); and a

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first reductant supply source capable of selectively directing a gas containing a reducing agent to flow into the first NOx adsorbing catalyst (e.g. See col. 13, lines 36-67; col. 14, lines 1-31).

Regarding claim 2, Nakatani further discloses that the second flow path has a portion that bypasses and is coaxial with the first NOx adsorbing catalyst (e.g. Figs. 3-6, 12-13, 23, 39, 42, and 44).

Regarding claim 3, Nakatani further discloses that the portion of the secondary flow path that is coaxial with the first NOx adsorbing catalyst is spaced axially outward from the main flow path (e.g. Figs. 3-6, 12-13, 23, 39, 42, and 44).

Regarding claims 4, and 26-28, Nakatani further discloses a diesel oxidation catalyst for oxidizing gases from the first and second flow paths, the diesel oxidation catalyst (220) being downstream from the first NOx adsorbing catalyst (210) (e.g. See col. 8, lines 31-48).

Regarding claim 5, Nakatani further discloses that the housing contains a chamber upstream of the diesel oxidation catalyst and downstream of the first NOx adsorbing catalyst wherein the first and second flow paths are capable of flowing into the chamber, the chamber being in fluid communication with the diesel oxidation catalyst (e.g. Figs. 3-6, 12-13, 23, 39, 42, and 44; col. 8, lines 3-62).

Regarding claims 6, and 23-25, Nakatani further discloses a first catalyzed diesel particulate filter continuance in the first flow path upstream of the first NOx adsorbing catalyst; wherein the second flow path has a portion that bypasses and is coaxial with the first catalyzed diesel particulate filter and the first NOx adsorbing catalyst (e.g. See col. 40, lines 35-64; col. 43, lines 25-67; col. 44, lines 1-61).

Regarding claim 7, Nakatani further discloses a control system (90) including sensors (e.g. 111, 121, 122) in communication with control logic, the control system operative to determine timing of the periodic regeneration of the first NOx adsorbing catalyst (e.g. See Figs. 18-19; col. 11, lines 1-67; col. 12, lines 1-28).

Regarding claims 8, and 20, Nakatani further discloses that the control system is further operative to regenerate the first NOx adsorbing catalyst by controlling the gas directing device to selectively direct at least a substantial portion of the exhaust gases from the engine through the second flow path while controlling the first reductant supply source to selectively direct the gas containing the reducing agent to flow towards the first NOx adsorbing catalyst (e.g. See col. 13, lines 36-67; col. 14, lines 1-41).

Regarding claim 9, Nakatani further discloses that the reducing agent comprises hydrocarbons used as fuel for the internal combustion engine (e.g. See col. 13, lines 36-67; col. 14, lines 1-41).

Regarding claims 10, and 29, Nakatani further discloses a second NOx adsorbing catalyst (220) contained in the second flow path, the second NOx adsorbing catalyst requiring periodic regeneration to purge accumulated NOx (e.g. See col. 13, lines 36-67; col. 14, lines 1-41).

Regarding claim 17, Nakatani further discloses a second NOx adsorbing catalyst (220) contained in the second flow path, the second NOx adsorbing catalyst requiring periodic regeneration to purge accumulated NOx, wherein the second NOx catalyst is downstream from and in the same general plane as the first NOx adsorbing catalyst (e.g. See col. 13, lines 36-67; col. 14, lines 1-41).

*Allowable Subject Matter*

Claims 11-16, 18, and 30-35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Since allowable subject matter has been indicated, applicant is encouraged to submit formal drawings in response to this Office action. The early submission of formal drawings will permit the Office to review the drawings for acceptability and to resolve any informalities remaining therein before the application is passed to issue. This will avoid possible delays in the issue process.

*Prior Art*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of four patents:

Mikami et al. (Patent Number 6655133), Hirota et. al. (Patent Number 6644023), Hoshi et al. (Patent Number 6321530), and Hirota et al. (Patent Number 6212885) all disclose an exhaust gas purification for use with an internal combustion engine.

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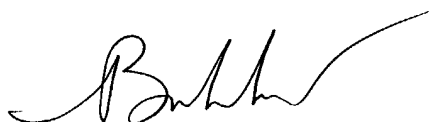
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Binh Tran whose telephone number is (703) 305-0245.

The examiner can normally be reached on Monday-Friday from 8:30 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reach on (703) 308-2623. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.



BT  
June 25, 2004

Binh Q. Tran  
Patent Examiner  
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